

disease incurable. We must substitute facts for superstition. We must also teach that an infection of syphilis is often an unfortunate accident, and not a shame to be hidden from the rest of the family. The physician is likewise put on the defensive by the public itself, which is learning what is proper diagnosis and proper treatment. They will be coming to the doctor in a position to criticize, if incompetent methods are used. The man of medicine must, therefore, examine himself as to shortcomings in knowledge of the disease, and be sure that the handling of each case is thorough and efficient.

The physician should also examine his conscience in regard to the cost to the patient. It has often been the practice in the past to place a special charge on venereal cases. This should be considered pernicious and, therefore, be discontinued. Only a fair charge, in which the cost of the medicine is considered, should be made for the physician's services. The public health departments must also develop a better liaison between themselves, the clinics of teaching institutions, and the doctors. They must be willing to assist the physician in the control of his cases. They must have police powers both to control the infected individual and to see that he receives the necessary treatment for cure. The work should not be taken out of the hands of private physicians except in the case of indigents. If possible, the boards of health should be able to supply the drugs so that the physician can treat his cases at a cost less prohibitive to the great mass of common people.

Men and women of the Profession of Medicine, this is the opportunity of our greatest service to humanity in our present century. Let us not be derelict in accepting the challenge.

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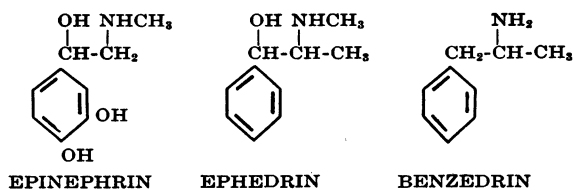
### BENZEDRIN SULPHATE

There has been a tremendous amount of research recently in the field of pharmacology concerned with drugs having soporific, depressant or analgesic effects. It far outshadows, in volume at least, that concerned with drugs of a contrary action. The search for oblivion to pain, in other words, still occupies its traditional place in medicine, as it should, but lags with characteristic human inconsistency far behind the search for stimulation. Yet the latter, in the long run, will probably prove to be more important and fundamental in explaining the physiology of consciousness.

Among the more interesting groups of substances falling in the category of stimulants are those which bear a chemical resemblance to epinephrin. Ever since the chemical formula of this naturally occurring drug was discovered, attempts have been made to find chemically related substances that have all its desirable pharmacologic effects, but that would be active on oral administration, which epinephrin is not. In the search for such substances, the first of any importance to be discovered was ephedrin, also a naturally occurring

compound but, unlike epinephrin, from the vegetable rather than from the animal kingdom. Ephedrin, as compared with epinephrin, was found to have essentially the same therapeutic, if not pharmacologic, action, except that it was active by mouth and had a more prolonged, although weaker, vasopressor and broncho-dilator effect. In addition, certain side effects were noted which were not characteristic of epinephrin, particularly that of producing insomnia. With this property in mind Janota<sup>1</sup> used ephedrin for treatment of narcolepsy with encouraging results.

Meanwhile Alles,<sup>2</sup> studying synthetic compounds related to epinephrin, noted that they varied in their central stimulant actions; and of these compounds one has been introduced into medicine under the name benzedrin, in the form of its sulfate. It has long been known that pharmacologic action is often related to chemical constitution, and this has been further confirmed in the case of the related substances epinephrin, ephedrin and benzedrin.



Just as ephedrin differs in its action, in some respects, from epinephrin, so does benzedrin differ from both epinephrin and ephedrin. All belong to a group of chemically related, vasopressor compounds. Their vasopressor (peripheral or sympathomimetic) activity differs, however, in intensity and duration. Epinephrin acts with the greatest intensity and for the shortest time. Ephedrin is intermediate in both these qualities, and benzedrin is the least effective (1/100 to 1/200) that of epinephrin), but has a more prolonged effect. Like ephedrin, benzedrin is also effective on oral administration. Also like ephedrin, benzedrin has a marked central stimulating effect. Prinzmetal and Bloomberg<sup>3</sup> have shown that it is more intensely and more certainly effective than ephedrin, as measured by its efficacy in the treatment of narcolepsy, being successful even when ephedrin fails.

It is this central effect that led Nathanson<sup>4</sup> to investigate the action of benzedrin sulphate both in patients complaining of fatigue and exhaustion and in normal individuals. The results of this investigation have been most striking and distinctly unique in the field of therapeutics. In summary, Nathanson<sup>4</sup> has found that the drug ameliorates fatigue and drowsiness, and produces a feeling of exhilaration, accompanied by an increase in mental

<sup>1</sup> Janota, O.: Symptomatische Behandlung der pathologischen Schlafsucht besonders der Narcolepsie, *Med. Klin.* 27: 278 (Feb. 20), 1931.

<sup>2</sup> Alles, G. A.: Comparative Physiological Actions of dl-B-Phenylisopropylamines, *J. Pharmacol. and Exper. Therap.*, 27: 339 (March), 1933.

<sup>3</sup> Prinzmetal, M., and Bloomberg, W.: The Use of Benzedrin for the Treatment of Narcolepsy, *J. A. M. A.*, 105: 2051 (Dec. 21), 1935.

<sup>4</sup> Nathanson, M. H.: The Central Action of Beta-amino-propylbenzen (Benzedrin), *J. A. M. A.*, 108: 528 (Feb. 13), 1937.

activity and efficiency. This is often associated with a tendency to loquaciousness and unusual friendliness. Loss of weight, from prolonged use, is ascribed not to an increase in metabolic rate, but to an increased activity, lessened sleep and diminution of appetite. This latter may be due to dryness of the mouth, an atropin-like effect often noted. Nasal congestion from acute or chronic affections of the upper respiratory tract is often markedly relieved. Unpleasant effects noted, usually of mild degree, were sweating, tremor of the hands, palpitation, headache, nausea, dysuria and diminution of libido.

The optimum dosage varies with individuals. Generally, 10 milligrams before breakfast and 10 milligrams before lunch results in onset of effect within thirty minutes to one hour after taking the first dose, and persists for seven to twelve hours after the second dose.

Unlike epinephrin and ephedrin, prolonged use does not seem to diminish the effectiveness of the drug nor produce cardiac irregularities. Nathanson,<sup>4</sup> however, warns that the increased activity, if carried beyond the capacity of a handicapped individual, carries with it obvious dangers. It is for this reason that its administration is to be undertaken only with the guidance of a physician.

In conclusion, it may be said that benzedrin is a drug which increases in great degree the awareness of an individual, a relatively unique pharmacologic phenomenon that opens new fields in the study of the physiology of consciousness.

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*Dentistry of 1864.*—J. R. Dillingham of 12 Winter Street, Boston, sends us the following rules for the preservation of the teeth:

First: Let care be given to the teeth of children. Deciduous teeth (first set) may be extracted too soon, or left too long. If the fangs of the first teeth are absorbed, drop out, and give place to the second, all will be well. But if they appear on either side of the arch, lose no time in applying to a good dentist.

Second: When a concretion of tartar collects upon the teeth of a person of any age or sex, lose no time in applying to a dentist for its removal. Many lament the loss of a whole set of teeth from this concretion alone.

Third: When a tooth becomes sensitive from taking cold or warm drinks, or a cavity appears ever so small, lose no time in applying to a judicious dentist, as many teeth are totally lost by not being timely filled with metal. But when filled with proper materials, and by a skillful dentist, it will preserve them, not for a few months only, but for a whole life. The bad effects produced by bad breath, occasioned by one or more diseased teeth, are not of small consideration. If the effects produced by such breath be so extremely unpleasant to the olfactory nerves of other individuals, what must be the effect upon the delicate tissues of our own lungs?

Fourth: All teeth too much decayed to be saved by plugging, and all roots, should be extracted, lest they injure the health of the general system.

Fifth: Lost teeth should be artificially restored, since they are rendered at once permanent, beautiful, and answer all reasonable expectations of the patient as regards articulation, mastication, and natural appearance.—*Found by R. S., New York, in Godey's Lady's Book and Magazine, July, 1864, p. 93.*

## ORIGINAL ARTICLES

### HUMAN BETTERMENT\*

By EDWARD M. PALLETTE, M.D.  
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**FOREWORD.**—Everyone, no doubt, is influenced more or less by his immediate surroundings. The following paper was written by me on a very recent six weeks' cruise along the shores and among the islands of the Gulf of California; or, as the Mexicans call it, the Vermilion Sea, or the Sea of Cortez.

Our ship† was a beautiful 200-foot Diesel-powered steel cruiser, ideally constructed for the purpose of making expeditions of exploration and doing scientific collecting. The accommodations were most comfortable, the food was excellent, the scenery inspiring, and the collecting very interesting. The ship possessed an excellent library of travel and natural science. Our company was a group of biologists and other scientists, all industrious and enthusiastic in their work. Life seemed full and well worth living.

I was, of course, influenced by the immediate environment, which was distinctly biological; but after returning home and rereading the paper, it was decided to leave it as written, although with the consciousness that it probably presents to a group of physicians some elementary biology with which they are already familiar.

I would make a plea for a wiser distribution of charity. I would call the attention of educators, preachers, social workers, lawmakers, and physicians to certain well-recognized findings of the science of biology.

### BEGINNINGS OF LIVING THINGS

To even the casual reader of history it is obvious that the story of the long life of man upon earth has been one of a succession of civilizations, each more or less distinct, in time and place, from the others. Archaeologists tell us that there are evidences of at least seven of these civilizations in very remote and prehistoric times. There have been at least an equal number since man began leaving written evidence of his doings.

It is estimated that life first appeared upon the earth about five hundred million years ago, beginning with microscopic, single-celled, marine forms, these becoming more complex and more highly developed through the ages. About five million years ago our remote ancestors gradually acquired those characteristics which entitled them to be called human. Then followed long ages of savagery to be succeeded by other long ages of barbarism and semi-barbarism, men living the lives of wild beasts in the jungle.

### THE FIRST CIVILIZATIONS

Back along this long line of darkness there was an occasional gleam of light. Some group of men

\* Address of the retiring president. Read before the first general meeting of the California Medical Association at the sixty-sixth annual session, Del Monte, May 3 to 5, 1937.

† *Velero III*, Captain G. Allan Hancock.